BB100

BROADCAST SERIES

AMEK

AMEK

in BROADCAST

a brief history

As one of the world's leading manufacturers of audio mixing consoles, we have many years experience in the design of professional audio products for the Broadcast field.

BCII

The BCII (launched in 1983) quickly established itself as a very reliable, cost-effective product capable of the 24-hours-a-day, 365days-a-year operation demanded by professional Broadcasters.

The BCII was soon joined by the Classic in 1985, which extended the range of applications to large-format television gallery sound desks, capable of multi-track operation and a high degree of customisation.

CLASSIC

After some 700+ mixers had been sold, the BCII was superseded by the BCIII in 1990 which offered increased flexibility, performance and customisation capabilities to the Broadcast market.

BCIII

Amek also brought Rupert Neve's unquestionable design expertise to the fore once again with the introduction of his superlative TLA microphone pre-amplifier.

Mr Rupert Neve

Even the earliest BCIIs are still giving their users faultless service and well over 1,500 BCIIs and BCIIIs are currently in daily on-air use throughout the world!

and now . . . . . .

. . . BB100

With the relentless expansion of Broadcasting in all parts of the world, we have recognised the market's need for a new, more cost-effective, small format audio console which is not only well-featured, but also able to deliver the performance and build quality expected by today's Broadcast professionals.

The BB100 is a versatile member of our range of professional audio mixing consoles with a flexible design aimed primarily at broadcasters, but still remaining suitable for use in many other applications.

Features

- Up to 32 channels can be fitted
- Up to 8 subgroups can be fitted
- There are 8 Aux sends, Aux 1-2 can be configured as stereo
- Up to 5 Stereo FX returns (depending on the number of subgroups fitted)
- Four chassis sizes are available - typical configurations are:
  (8 + 2 stereo / 4 / 2)
  (16 + 2 stereo / 4 / 2)
  (24 / 8 / 2)
  (32 / 8 / 2)
- Mono channels have 4 band EQ, Stereo channels have 3 band EQ. Both have swept mids with adjustable Q and In/Out switch

The BB100 includes many features useful to broadcasters

- Up to 4 Cleanfeed Outputs with talkback. These outputs can be changed (using internal jumpers) to an output matrix fed from the groups and main output
- Control Room Monitor with external inputs and outputs for Main and Nearfield speakers. One of the sources has a 4 input sub mixer for returns from video machines
- Studio Monitor with talkback. This output is automatically muted by the On Air switch or when a channel fader is open and that channel is selected to "Mic"
- The On-Air Switch also inhibits line-up tone and oscillator signals and provides an output which can be used to operate an external On-Air lamp. The On-Air function can also be activated from outside the console
- "Soft" Mute circuits
- Fader Starts and External Mutes
- Stereo channels have M-S (Sum and Difference) Switches
- Channel Meters reading the prefade signal
- Direct Outputs on all mono input channels
- Conductive plastic faders

Other system features

- LED indication on all important switches
- Major inputs and outputs are balanced
- Stereo PFL/AFL bus
- Many internal jumper links for user configuration
- Line up oscillator with 3 frequencies
- Metering uses 28 segment lightmeters and moving coil meters

LB1 Mono Input

Balanced Mic/Line Input

Phantom Power	+48V to Mic Input.
Pad	Attenuates Mic Input by –15 dB, maximum signal level is +7 dBu.
Line	Selects Mic or Line Input.
Phase Reverse	Operates on both Mic and Line inputs.
Gain Control	Mic from +10 to +70 dB.
	Line from -20 to +20 dB.

Four Band Equaliser with "IN" switch

HF	+/-18 dB shelving response at a frequency of 6 kHz or 12 kHz.
HMF	+/-14 dB with a continuously variable frequency range from 300 Hz to 6 kHz.
	The x3 button changes the range to 900 Hz - 18 kHz.
HMF Q Switch	Q setting of 0.7 or 1.3
LMF	+/- 14 dB with continuously variable frequency range from 40 Hz - 800 Hz.
	The x3 button changes the range to 120 Hz - 2.4 kHz.
LMF Q Switch	Q setting of 0.7 or 1.3
LF	+/-18 dB shelving response at a frequency of 40 Hz or 80 Hz.
	The x3 Button changes the frequencies to 120 Hz or 240 Hz.
HP Filter	18 dB per octave, -3dB at 80 Hz.

8 Aux Sends

Mono Aux Sends	Aux sends 3/4, 5/6, and 7/8 can be switched Pre-Post fader in pairs and have dual concentric controls for a level/level arrangement.
Stereo Aux Send	Aux 1/2 is similar but has an internal option to change the controls to a level/pan arrangement.

Other Features

Insert point	The insert point is post-EQ and pre-fader. The insert return is balanced.
Channel Pan	This pans across the stereo and group buses. Pan to left routes to the odd groups and pan to right routes to the even groups.
Group Disable	Pan can be disabled from the groups by using the Group Disable switch.
Soft Mute	The module uses a soft mute circuit for click free switching.
Fader	Conductive Plastic ALPS 100 mm fader with 10 dB gain in hand.
Fader Start	- is provided
Mute bus	When a channel is selected to Mic and the fader is open, a control signal is sent to mute Monitor 2 (Studio Monitor).
Direct Output	The direct output is normally fed from the post fade signal, but can be selected to pre-fader-post-mute or pre-EQ using internal jumpers.
PFL	The PFL switch provides pre fade signal to the monitor speakers.
AFL Option	An internal jumper option allows the PFL signal to be replaced by AFL - this signal is derived post pan and is therefore stereo.
Meter	A four segment meter displays channel pre-fade level, monitoring pre-EQ and post-EQ simultaneously. The overload lamp lights when the signal reaches +18 dB.
Group Routing	Four Group assign switches are provided, assigning groups in pairs. These are labelled '1/2', '3/4', '5/6', and '7/8'.
	* *Groups are available only if the appropriate number of Group Modules are fitted.*
Routing to Stereo	Assigns the signal on the Input module to the Stereo Bus.

LBS Stereo Input

Balanced Input

Mono Left — Applies the left hand signal to both left and right hand sides of the module.

Mono Right — Applies the right hand signal to both left and right hand sides of the module.

** If both mono switches are pressed together, a blend of left and right signals appears on both sides of the module.*

Phase Reverse — Reverses the phase of the right hand signal only.

Gain Control — From -20 to +20 dB.

Three Band Equaliser with "IN" switch

HF — +/-18 dB shelving response at a frequency of 6 kHz or 12 kHz.

MF — +/-14 dB with a continuously variable frequency range from 80 Hz to 5 kHz.

The x3 button changes the range to 240 Hz - 15 kHz.

MF Q Switch — Q setting of 0.7 or 1.3

LF — +/-18 dB shelving response at a frequency of 40 Hz or 80 Hz.

The x3 Button changes the frequencies to 120 Hz or 240 Hz.

HP Filter — 18 dB per octave, -3dB at 80 Hz.

8 Aux Sends

Mono Aux Sends — Aux sends 3/4, 5/6, and 7/8 are fed from the sum of left and right signals.

They can be switched Pre-Post fader in pairs and have dual concentric controls for level/level arrangement.

Stereo Aux Send — Aux 1/2 is similar but has an internal option to change the controls to a stereo level/pan arrangement, i.e. Aux 1 will be fed from the left only and Aux 2 will be fed from the right only.

Other Features

Insert point — The insert point is post-EQ and pre-fader. The insert return is balanced.

Channel Pan — This pans across the stereo and group buses. Pan to left routes to the odd groups and pan to right routes to the even groups.

Soft Mute — The module uses a soft mute circuit for click free switching.

Fader — Conductive Plastic ALPS 100 mm fader with 10 dB gain in hand.

Fader Start — - is provided

PFL — The PFL switch provides stereo pre-fade signal to the monitor speakers.

AFL Option — An internal jumper option allows the PFL signal to be replaced by AFL - this signal is derived post pan.

Meter — A four segment meter displays channel pre-fade level, monitoring left and right simultaneously. The overload lamp lights when the signal reaches +18 dB.

Group Routing — Four Group assign switches are provided, assigning groups in pairs. These are labelled '1/2', '3/4', '5/6', and '7/8'.

** Groups are available only if the appropriate number of Group Modules are fitted.*

Routing to Stereo — Assigns the signal on the Input module to the Stereo Bus.

LB2 Dual Subgroup

Aux Sends and Output Matrix Option

Mono Aux Sends — Both subgroups can feed Aux sends 1/2 and 3/4 only.

Two sets of controls are provided - the first set is fed from the odd numbered group and the second set from the even numbered group.

Each set can be switched Pre-Post fader, the switches operate on all four Aux sends. They have dual concentric controls, for level/level arrangement.

Matrix Send Option — The aux controls can be used to feed an output matrix instead of the aux buses, this option is selected using an internal switch.

** Note – this option can only be used if the Cleanfeed outputs are not used.*

Cleanfeed (Mix-minus) and Output Matrix Option

Output — The Cleanfeed output is electronically balanced.

Number of Outputs — One Cleanfeed mix amp is located in each dual subgroup module, so the number of available Cleanfeed outputs is the same as the number of Dual Subgroup modules fitted in the console, with a maximum of four.

Matrix Send Option — This uses the same circuitry as the Cleanfeed outputs and so the option is not possible if Cleanfeeds are being used.

AFL — The AFL switch sends the post fade signal to the monitor speakers.

Talk to Cleanfeed — This switch enables talkback when the Talk switch is pressed on the LB6 Aux Master module.

Mute — The mute switch mutes the output. The output is also temporarily muted when the console is switched on to prevent power-on thumps in equipment connected to it.

Cleanfeed Channels — The four channels immediately to the left of the Dual Group modules are used for Cleanfeed Inputs. If the signal is inserted into the first of the four modules (Cleanfeed 1), it will then be removed from the Cleanfeed Output 1 on the Group module.

Tally Lamp — The Tally Lamp can provide a telephone line "ready" indication controlled from outside the console.

Stereo return Input

Level Control — From "Off" to +10 dB.

ST / Mix Switch — This switch feeds the stereo return either to the Stereo bus or to the associated pair of groups.

Aux Send — The Aux send control can send the signal to Aux 1/2 or Aux 3/4 via an internal jumper link. It also includes a pre/post switch which switches between Pre and Post the group return level pot.

Pan Control — This pans across the stereo and group buses.

Pan to left routes to the odd numbered group and pan to right routes to the even numbered group.

Mute Switch - is provided

PFL — The PFL switch provides pre fade signal to the monitor speakers.

Subgroup

Output — The Subgroup output is electronically balanced.

Fader — Conductive Plastic ALPS 100 mm faders with 10 dB gain in hand.

Fader Start — One output is provided which is activated when either of the two faders is open.

Insert point — Each group has a pre-fader insert point. The insert return is balanced.

Subgroup Pan — This pans across the stereo bus.

Soft Mute — The module uses a soft mute circuit for click free switching.

Power On Mute — In addition to the soft mute circuit, the output is also temporarily muted when the console is switched on to prevent power-on thumps in equipment connected to it.

AFL — The AFL switch provides post fade signal to the monitor speakers.

Routing to Stereo — Assigns the signal on the subgroup to the Stereo Bus.

Metering — Group meters can be fitted in the console meterhood depending on the meterhood type.

LB6 Aux Master and Comms

Aux Outputs

Output The Aux outputs are electronically balanced with 10 dB gain in hand.

Mute A Mute switch is provided.

AFL An AFL switch is provided.

Communications

Mic Input The top of the module contains a Talkback Mic XLR connector with a balanced input.

Talk Switch A Talk switch activates the Comms system. This switch can be momentary or latching depending on the length of time it is pressed.

Dim on Talkback There is an option to dim the Control Room Monitors when talkback is active.

Talkback Destinations Four switches select destination of Talkback sources:

Slate - assigns Comms to group buses 1-8 and/or the stereo bus.

Aux 5 - 8 - assigns Comms to Aux 5, 6, 7, & 8.

Aux 1 - 4 - assigns Comms to Aux 1, 2, 3, & 4.

Speaker - assigns Comms to Monitor 2 and/or the Comms output connector.

Four additional switches located on the Subgroup modules enable talkback to the Cleanfeed outputs.

On-Air (User) Switch

Operation The On-Air (User) switch disables tone and talkback from the destinations of the slate switch (other destinations are not affected).

The On-Air switch also mutes Monitor 2 (Studio Monitors).

Control Output There is a control output which can be used to operate external equipment such as an On-Air light (using a suitable relay).

Control Input The On-Air function can be activated from outside the console.

Oscillator

Frequencies The oscillator has three frequencies.

The default is "OFF" with both buttons up. Pressing the "1 kHz" button provides 1 kHz, pressing the "10 kHz" button provides 10 kHz and pressing both buttons provides 100 Hz.

Routing The Oscillator utilises the same four assignment switches as the Comms systems to send tone to Slate, Aux Sends and Speaker outputs.

Headphones

Source A stereo headphone jack is provided which can be fed from the Control Room Monitor, or optionally Monitor 2. A second headphone jack is provided on the console chassis.

Load The headphones should have an impedance of 200 ohms or greater.

LB4 Master and Monitor

Aux Sends, Output Matrix Option and Monitor Mixer Option

Mono Aux Sends

The main left and right outputs can both feed Aux sends 1/2 and 3/4.

Two sets of controls are provided - the first set is fed from the stereo bus left signal and the second set from the right signal.

Each set can be switched Pre-Post fader, the switch operates on all four Aux sends.

They have dual concentric controls, for level/pan. There is an internal option to change controls to a level/level arrangement.

Aux to Cleanfeed

The aux controls can be used to feed signal to the Cleanfeed (or Matrix) outputs instead of the aux buses, this option is selected using internal jumpers.

Monitor Mixer

The aux controls can also be used as a four input mixer with level and pan controls to feed one of the Control Room monitor sources.

In this case, the source for the Aux controls is changed from the stereo bus to the four Monitor Return inputs using internal jumpers. Further jumpers allow the destination to be the Stereo Return switch for the Control Room Monitors.

Stereo Return Input

Level Control From –20 to +10 dB.

Mute Switch - is provided.

PFL The PFL switch provides pre fade signal to the monitor speakers.

ST / Mix Switch This switch feeds the stereo return either to the Stereo bus or to the associated pair of groups.

Peak / VU Switch

This switch operates on the bargraph meters in the meterhood so that they measure the peak or the average level of the signal.

PFL / AFL level control and LED

This control adjusts the level of the solo bus to the monitor speakers. The LED lights when the PFL / AFL system is active.

Monitor 2 (Studio Monitor)

Input Sources

Three sources are available:

Stereo bus - follows the stereo bus.
Control Room Monitor - follows the selected Control Room monitor source.
Stereo Return - follows the Stereo Return inputs.

Talkback Talkback is available via the switch on the LB6 master module.

Power On Mute The output is temporarily muted by a relay when the console is switched on to prevent power-on thumps in equipment connected to it.

Mute bus When a mono channel is selected to Mic and the fader is open on that channel, a control signal is sent to mute Monitor 2.

On-Air Mute The On-Air (User) switch also mutes Monitor 2.

External Mute There is a jumper selectable option to enable a mute line from outside the console.

Mute LED This lights when one of the mute conditions described above is active.

Headphones The console has one headphone output which can be fed from Monitor 2 or Monitor 1 signals. The source for the headphone output is selected via an internal jumper.

Monitor 1 (Control Room Monitor)

Input Sources

Six sources are available

Tape 1 to Tape 4 - Provide four balanced inputs. Tape 1 has an option to set the input sensitivity to –6dBu.

Stereo Return - monitors the stereo return input and (via internal jumpers) can be selected to read the 4 input monitor mixer (see earlier in this section).

Stereo bus - monitors the main stereo bus outputs.

Speaker 2	A Speaker 2 switch is provided.
Headphones	The console has one headphone output which can be fed from Monitor 1 or Monitor 2 signals. ** The source for the headphone output is selected via an internal jumper.*
Mute	A Mute switch is provided.
Power On Mute	The output is temporarily muted by a relay when the console is switched on to prevent power-on thumps in equipment connected to it.
Mono	A Mono switch is provided.
Meter Output	A stereo meter output feeds the console meters and is also available on a connector to feed an additional external meter.
Dim on Talkback	There is an option to automatically dim the monitors when console talkback is active.
PFL/AFL	The monitors automatically switch to PFL/AFL when a PFL/AFL switch is pressed.
External Mute	There is a jumper selectable option to enable a mute line from outside the console.

Main Output

Output	The main outputs are electronically balanced.
Fader	Conductive Plastic ALPS 100 mm faders with 10 dB gain in hand. Separate faders are fitted for left and right signals.
Insert point	The main output has a pre-fader insert point. The insert return is balanced.
Mute Switch	- is provided.
Power On Mute	The output is temporarily muted by a relay when the console is switched on to prevent power-on thumps in equipment connected to it.
External Mute	There is a jumper selectable option to enable a mute line from outside the console.
Metering	The main output is metered via the Control Room Monitor meters.

Metering

Metering is via 28 segment LED bargraph meters plus a pair of moving coil meters which can be either PPM scales (BBC or DIN) or VU scales.

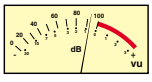
BBC

Bargraph meters can be switched to Peak or Average response using the switch on the LB4 Master Module.

DIN

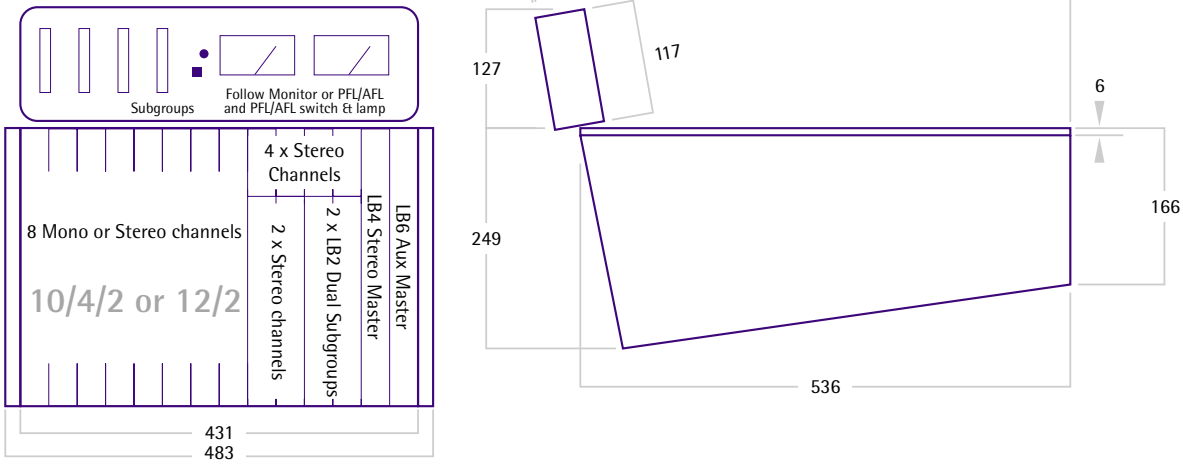
Meters can read Subgroup Outputs, Follow Monitor and PFL/AFL.

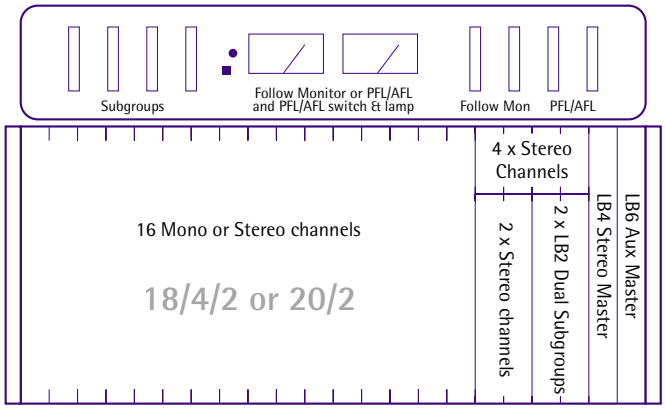
The meterhood switch selects the VU meters to read Follow Monitor or PFL/AFL together with a pair of trimmers for fine adjustment.

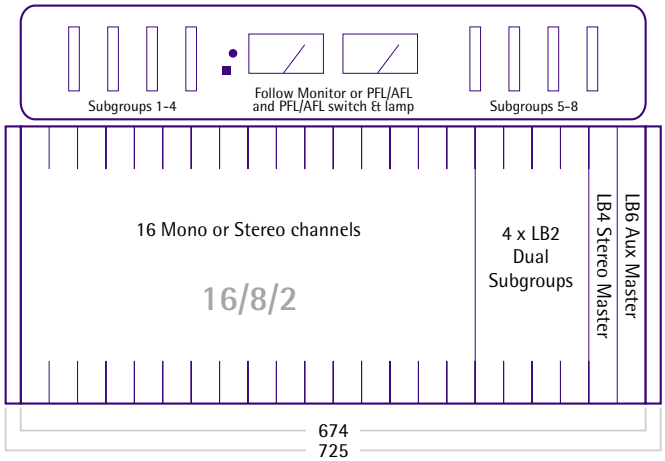


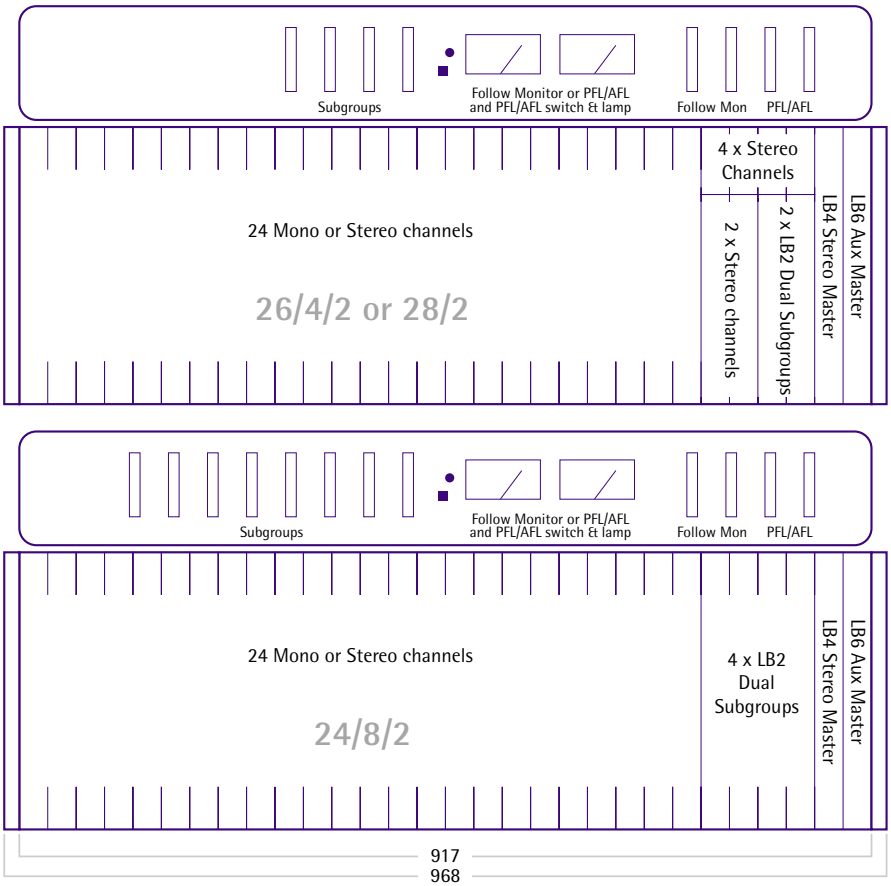
VU

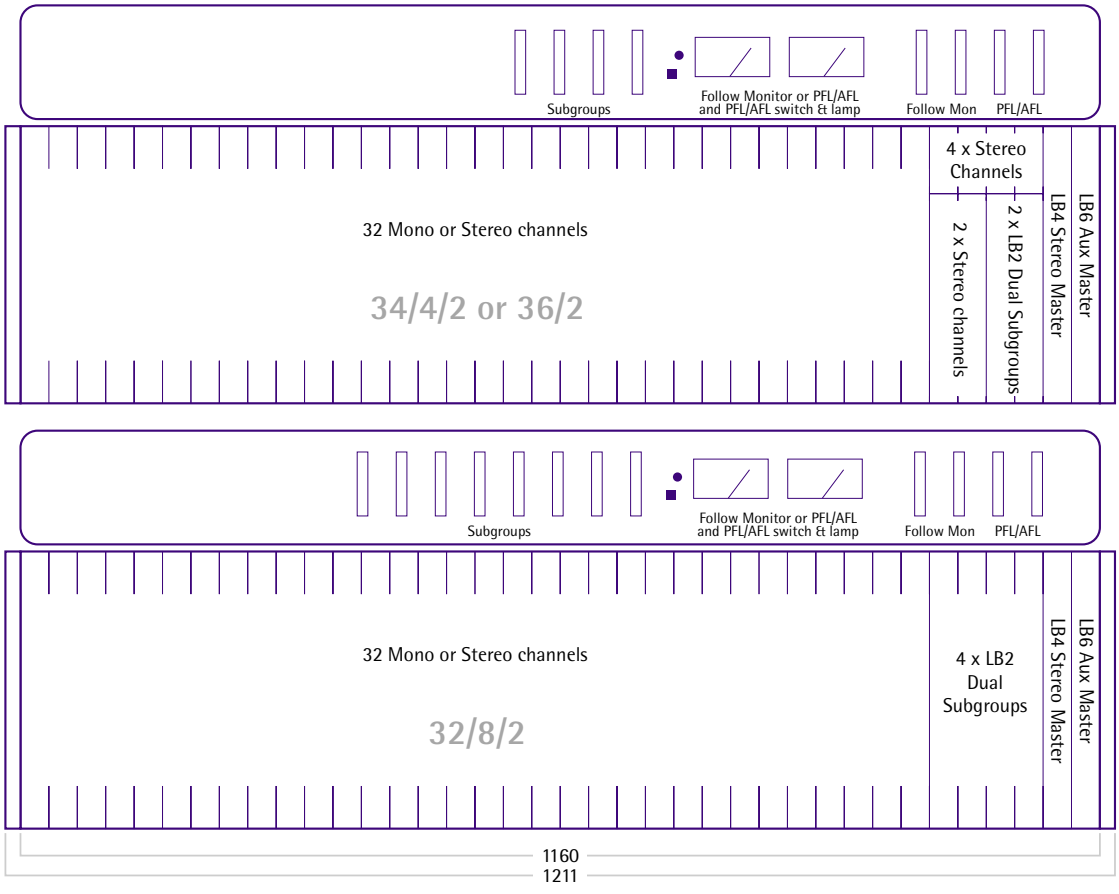
Configurations & Dimensions



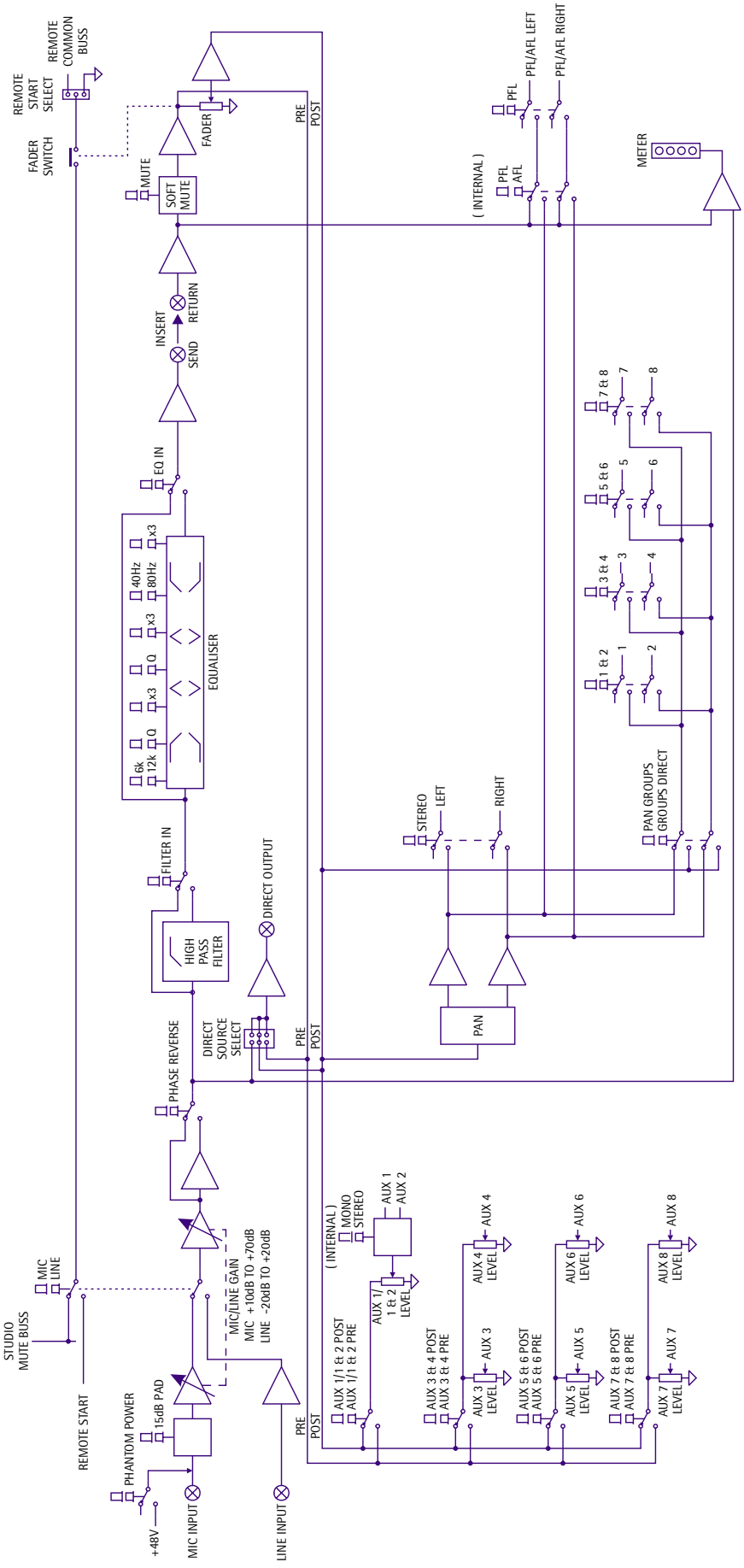




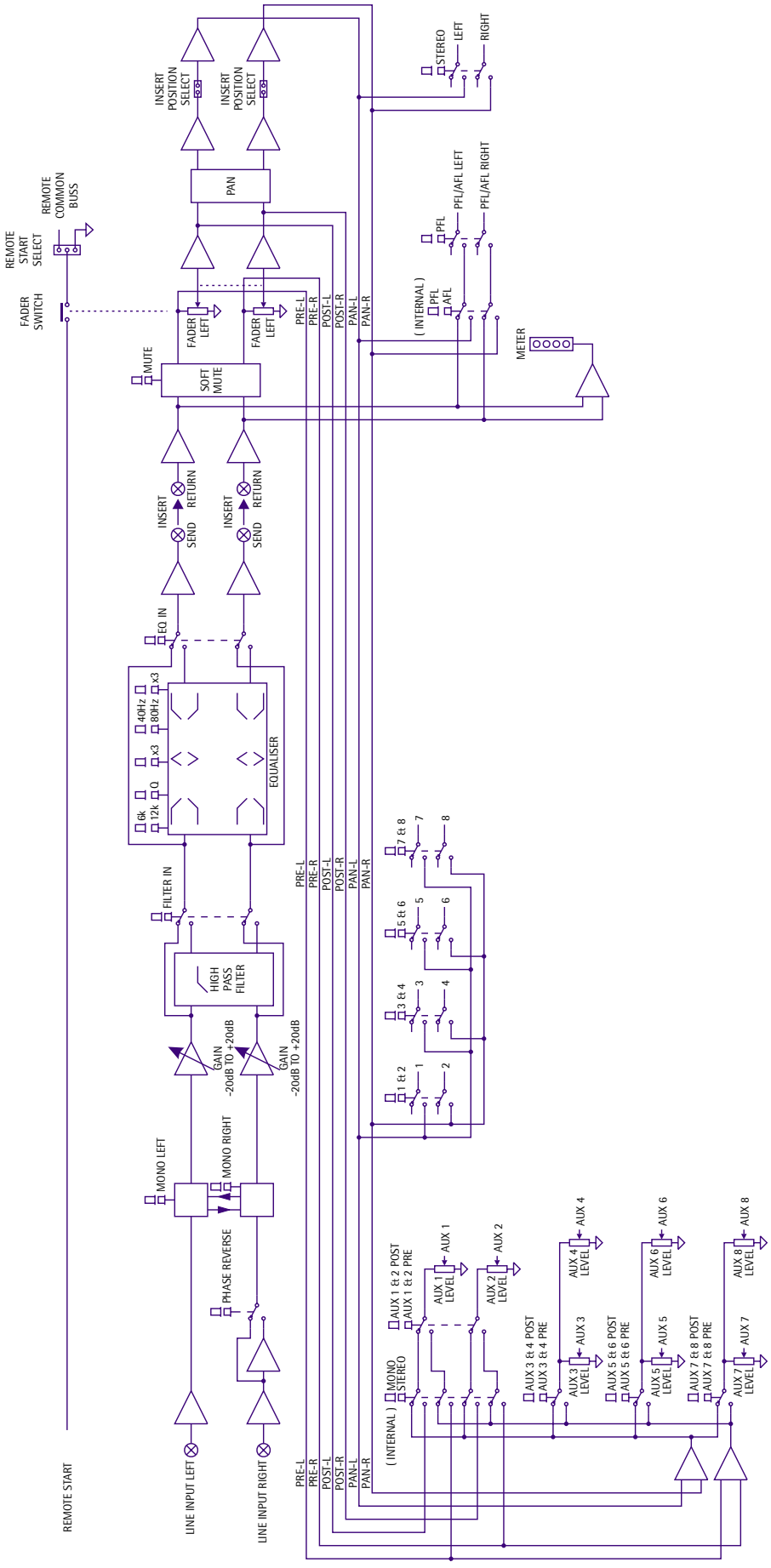

Subgroups
Follow Monitor or PFL/AFL and PFL/AFL switch & lamp
Follow Mon
PFL/AFL
4 x Stereo Channels
24 Mono or Stereo channels
26/4/2 or 28/2
2 x Stereo channels
2 x LB2 Dual Subgroups
LB4 Stereo Master
LB6 Aux Master
Subgroups
Follow Monitor or PFL/AFL and PFL/AFL switch & lamp
Follow Mon
PFL/AFL
24 Mono or Stereo channels
24/8/2
4 x LB2 Dual Subgroups
LB4 Stereo Master
LB6 Aux Master
917
968


Subgroups
Follow Monitor or PFL/AFL and PFL/AFL switch & lamp
Follow Mon
PFL/AFL
4 x Stereo Channels
32 Mono or Stereo channels
34/4/2 or 36/2
2 x Stereo channels
2 x LB2 Dual Subgroups
LB4 Stereo Master
LB6 Aux Master
Subgroups
Follow Monitor or PFL/AFL and PFL/AFL switch & lamp
Follow Mon
PFL/AFL
32 Mono or Stereo channels
32/8/2
4 x LB2 Dual Subgroups
LB4 Stereo Master
LB6 Aux Master
1160
1211

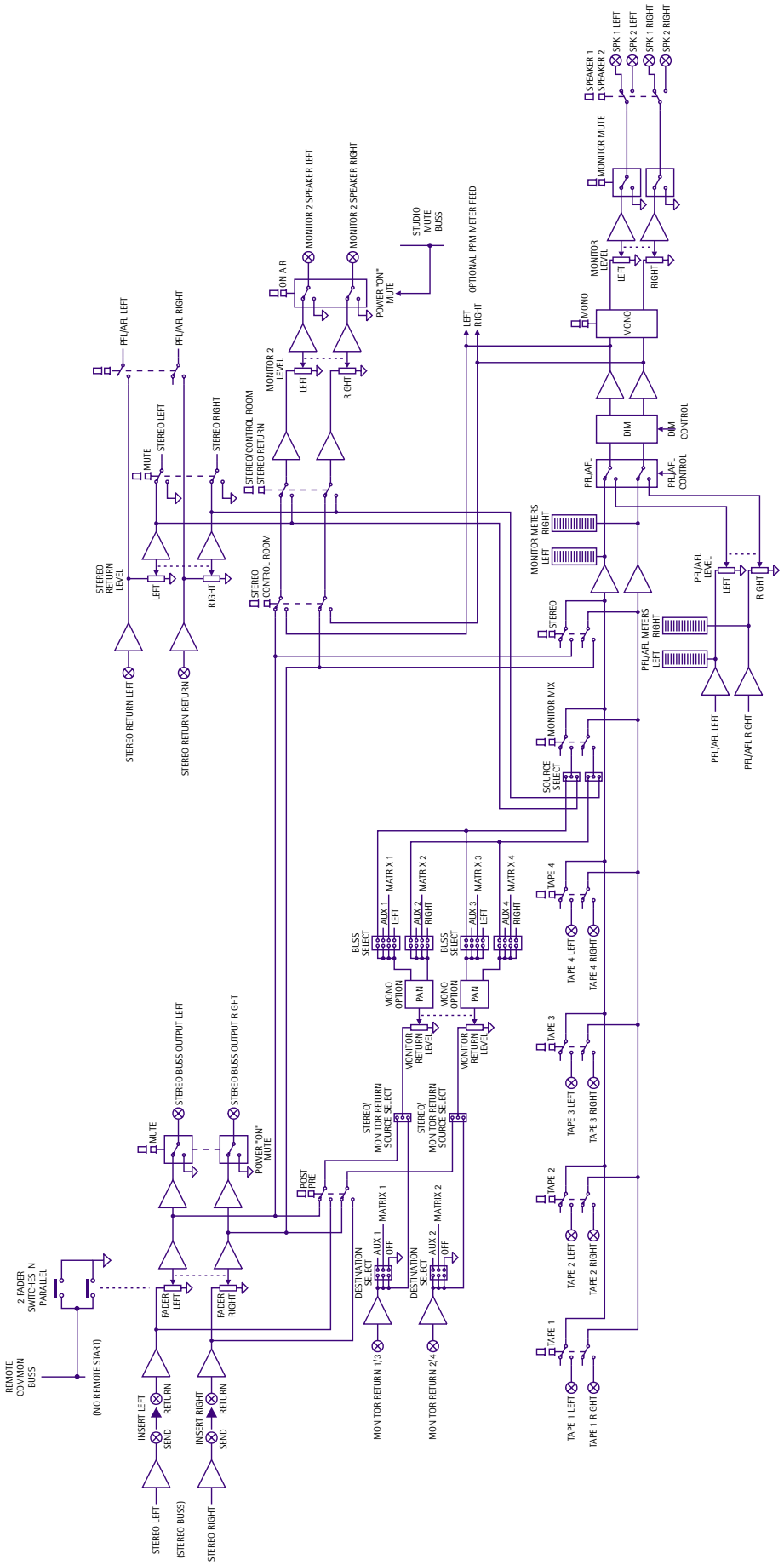
LB1 Mono Input Block



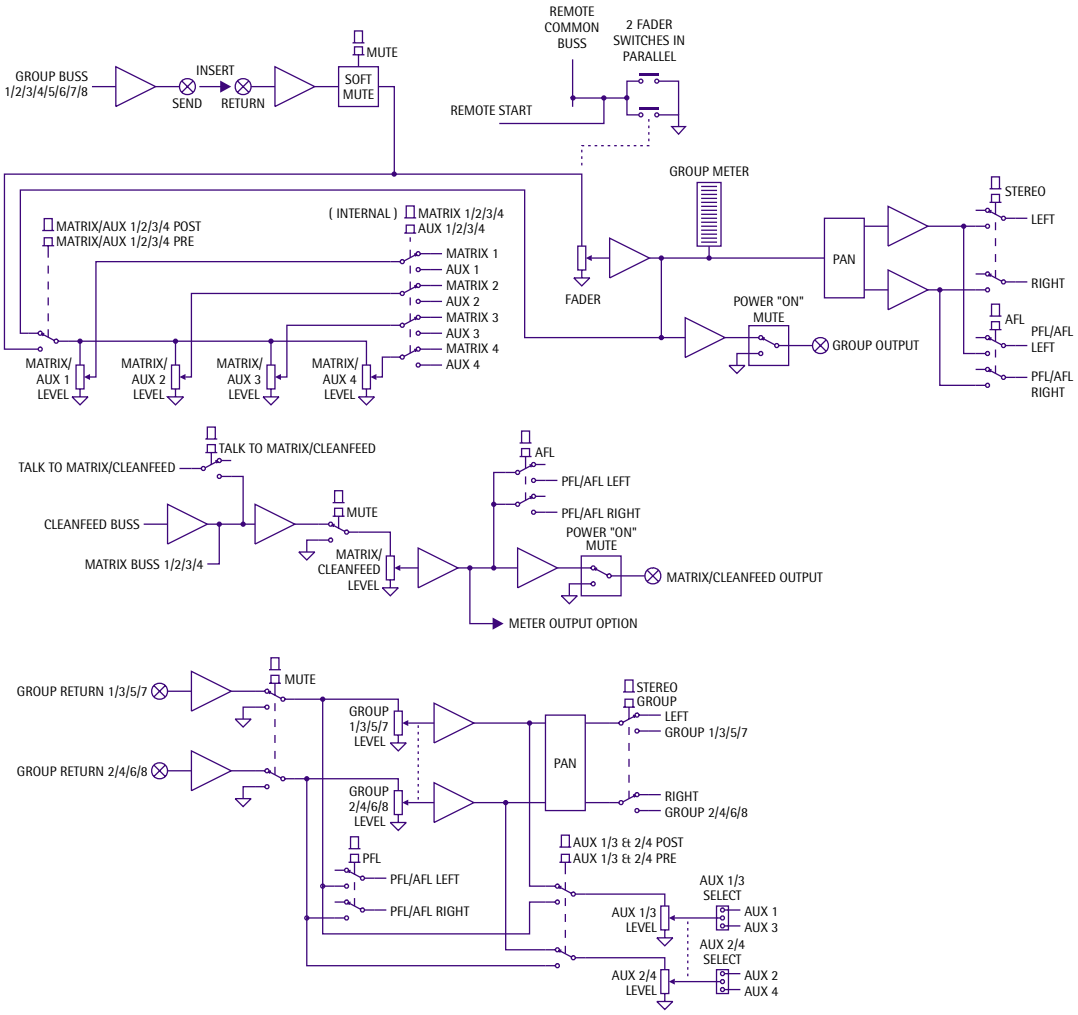
LBS Stereo Input Block



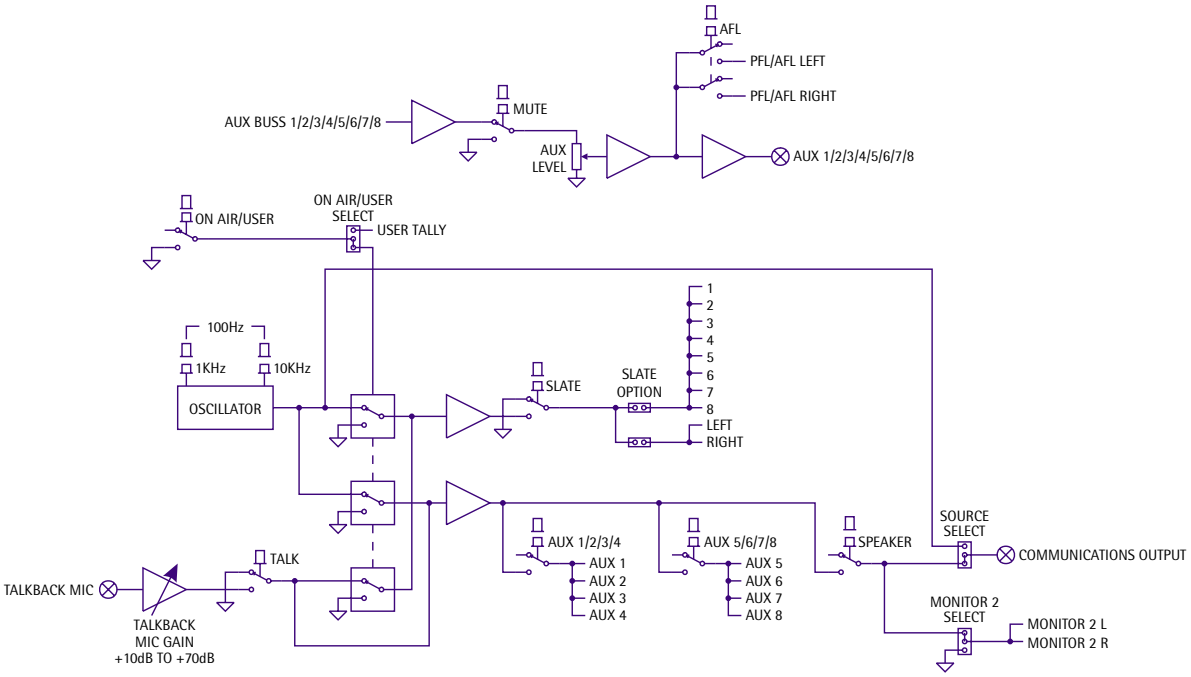
LB4 Master Module Block



LB2 Dual Subgroup Module Block

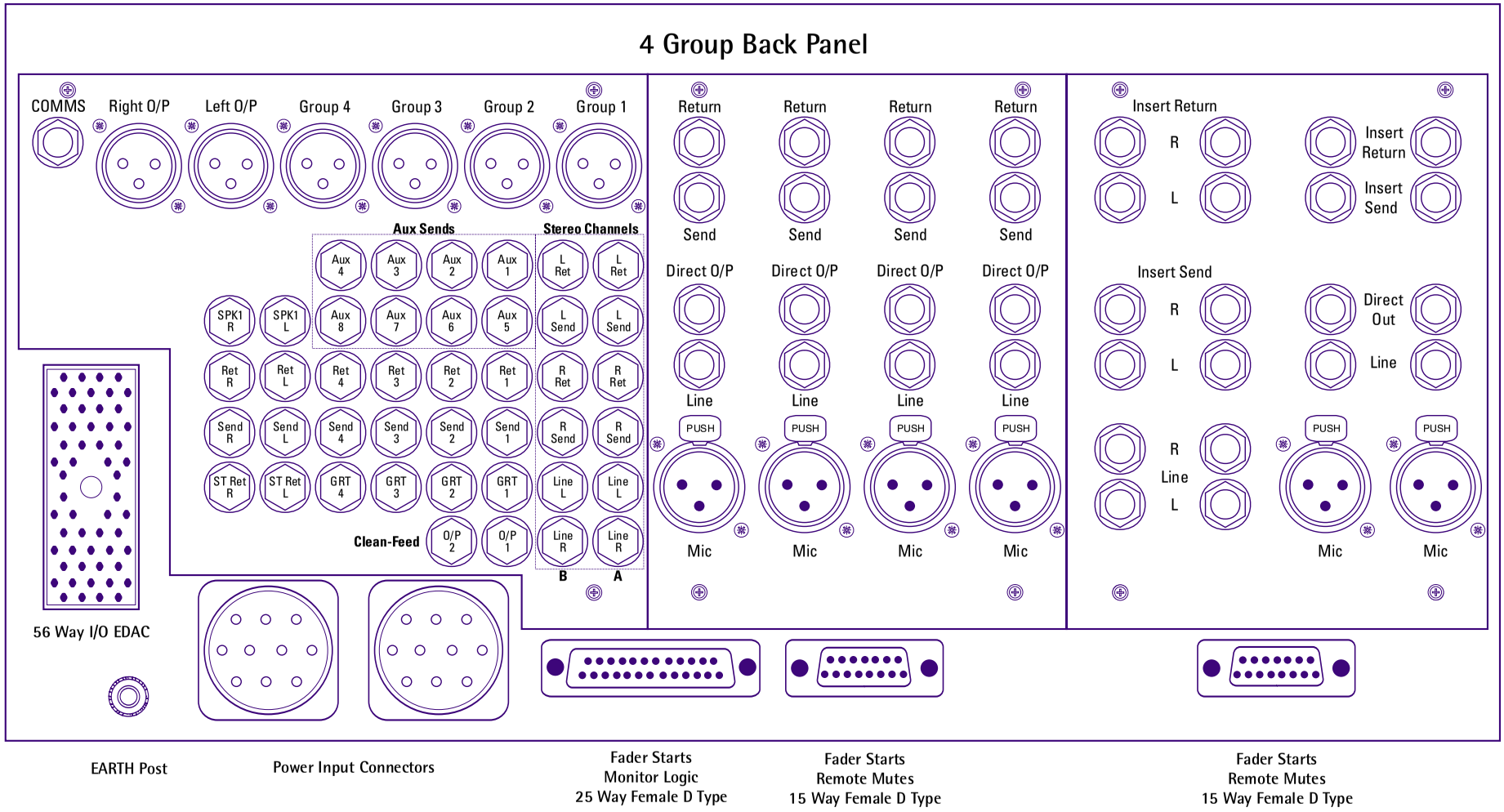


LB6 Aux Master & Comms Module Block



4 Group Connector Panel

4 Group Back Panel



EARTH Post

Power Input Connectors

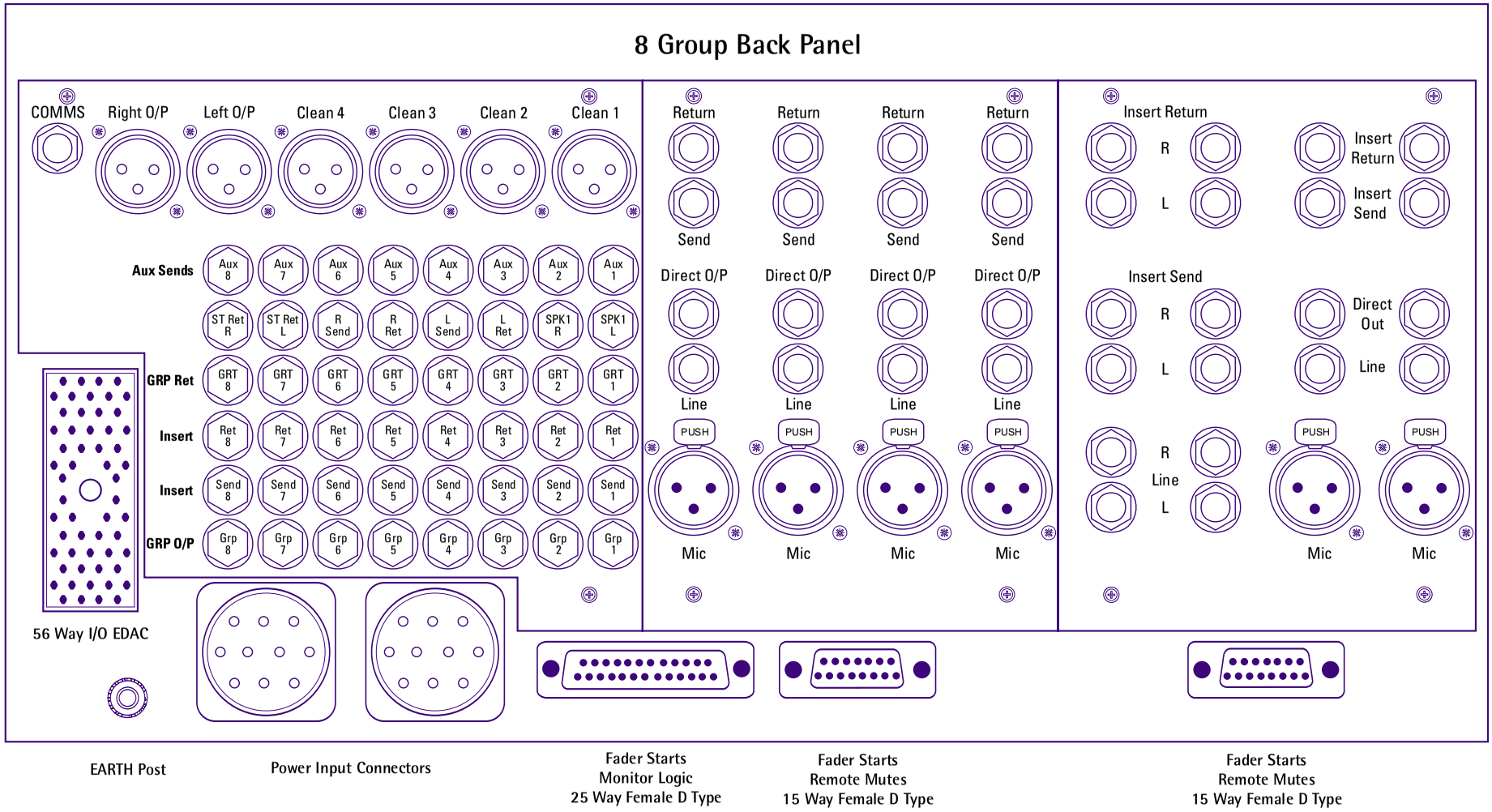
Fader Starts
Monitor Logic
25 Way Female D Type

Fader Starts
Remote Mutes
15 Way Female D Type

Fader Starts
Remote Mutes
15 Way Female D Type

8 Group Connector Panel

8 Group Back Panel



EARTH Post

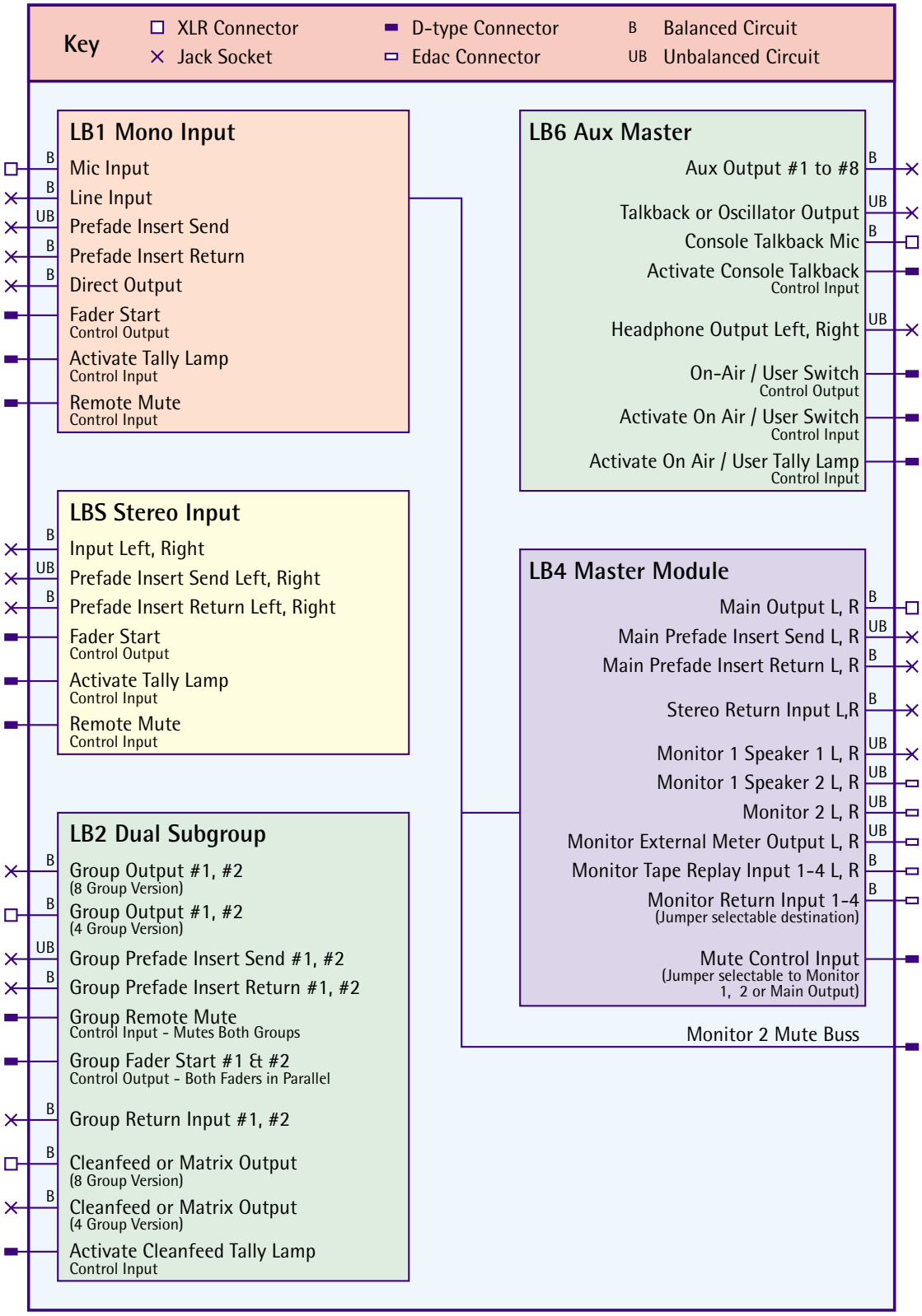
Power Input Connectors

Fader Starts
Monitor Logic
25 Way Female D Type

Fader Starts
Remote Mutes
15 Way Female D Type

Fader Starts
Remote Mutes
15 Way Female D Type

Schedule of Connections



Technical Specifications

Noise

EIN - 200R source, Gain 70dB - 20kHz band RMS	-127dBu
One Line input to Stereo - Gain unity - 20kHz band RMS	-86 dBu

THD

Mic input to Main output with 10k or 600R load,	
Test signal -30dBu @ 1kHz, Gain 40dB	<0.03%
Line input to Main output with 10k or 600R load,	
Test signal +20dBu @ 1kHz, Gain unity	<0.01%

Frequency Response

All Filters & EQ out, output load 10k	
Mic input to Main output, Gain 60dB, test signal -40dBu	+/- 0.5dBu (20Hz - 20kHz)
Line input to Main output, Unity gain, test signal +20dBu	+/- 0.5dBu (20Hz - 20kHz)

Crosstalk

Channel breakthrough	CH1 to Subgroup 1, CH4 to Subgroup 4, Gain unity Test signal +20dBu to CH1, 200R load to CH4 Measured @ Subgroup 4 output	Better than -90dBu (40Hz - 15kHz)
Channel Pan cut-off	CH1 to Subgroup 4, Pan hard right, Gain unity Test signal +20dBu to CH1 Measured a Subgroup 3 output	Better than -65dBu (@1kHz)

Maximum Signal Handling

Mic input	+25dBu (with PAD)
Line input	+25dBu
Subgroup & Main Outputs	+25dBu (600R load or higher)

Impedance

Mic input	> 1k2 (20Hz - 20kHz)
Line input	15k (20Hz - 20kHz)
Outputs	75R (@1kHz)

Power Consumption

10-4-2 console	approx. 0.5 kW
32-8-2 console	approx. 1.2 kW

Notes

1. 0dBu = 0.775 volts.
2. Above specifications apply to standard configuration with 8 mono inputs.
3. All measurements taken using the Audio Precision System One test set.
4. Where no load impedance is specified, use 10k or greater.
5. All figures quoted above are expected typical performance from standard production models.
6. No literature represents an offer for sale of any particular product.
7. The company operates a policy of continuous design improvement and reserves the right to change specifications without notice.

AMEK

A Harman International Company

International Headquarters

Langley House
Third Avenue
Trafford Park
Manchester
M17 1FG

Tel: +44 (0) 161 868 2400
Fax: +44 (0) 161 873 8010

www.amek.com

Los Angeles

2740, W Magnolia Blvd
#102
Burbank
CA91505

Tel: +1 818 973 1618
Fax: +1 818 973 1622

Nashville

1449, Donelson Pike
Airpark Business Centre 12
Nashville
TN37217

Tel: +1 615 360 0488
Fax: +1 615 360 0273

Tokyo

3-5-14, Konan
Minato-ku
Tokyo
108-0075

Tel: +81 (0) 3 5707 0575
Fax: +81 (0) 3 5707 0599

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